

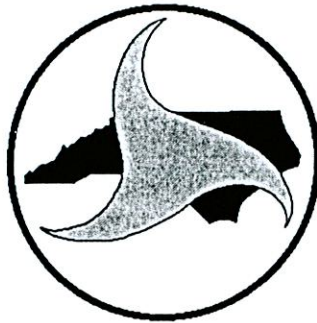
FEASIBILITY STUDY

Asheville

Merrimon Avenue (US 25)  
From I-240 to  
Beaverdam Road (SR 2230)  
Buncombe County

Division 13

FS-9913B



Prepared by the  
Program Development Branch  
Division of Highways  
N. C. Department of Transportation

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5/7/99  
Date

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## I. General Description

This feasibility study describes improvements to Merrimon Avenue (US 25) from I-240 to Beaverdam Road (SR 2230), a distance of 1.8 miles (2.9 km). These improvements are modifications of the existing four-lane undivided section in an effort to improve traffic safety and operations along this section of Merrimon Avenue (US 25). The project location is shown on Figure 1. Two cross-section alternates were studied for this section of Merrimon Avenue.

### Alternate 1

Alternate 1 proposes to convert the existing four-lane undivided section, 40-foot (12.2-m) wide face-to-face of curbs to a three lane curb and gutter section. This cross-section includes wide outside lanes to accommodate bicycle traffic. This alternate includes the relocation of Murdock Avenue to the W. T. Weaver Boulevard / Merrimon Avenue intersection. It is anticipated that 90 feet of right-of-way will be needed for this relocation. This alternate does not include any horizontal or vertical improvements to this section of Merrimon Avenue. It is anticipated that no residences and 1 business will be relocated as a result of this alternate. The total cost of Alternate 1, including construction and right-of-way, is estimated to be \$2,530,000.00. It should be noted that the total construction cost for this alternate includes the resurfacing and restriping of Merrimon Avenue in the project area, and the proposed Murdock Avenue relocation.

Construction.....	\$ 2,030,000
Right-of-way.....	\$ 500,000
Total Cost .....	\$ 2,530,000

### Alternate 2

Alternate 2 is the asymmetrical widening of Merrimon Avenue to a five-lane curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on 90 feet (27.4 m) of right-of-way. All the required right-of-way and widening is anticipated to be on the west side of Merrimon Avenue. Some additional right-of-way will be needed just north of both the Chestnut Street and W. T. Weaver Boulevard intersections in order to provide



southbound right turn lanes on Merrimon Avenue. This alternate also includes the relocation of Murdock Avenue to the W. T. Weaver Boulevard / Merrimon Avenue intersection. The anticipated right-of-way width for the relocation is 90 feet (27.4 m). In addition, this alternate also includes the lowering of the grade of the hill on Merrimon Avenue just north of Chestnut Street. This cross-section includes wide outside lanes to accommodate bicycle traffic. It is anticipated that there will be 19 residences and 55 businesses relocated due to this alternate. The total cost of Alternate 2, including construction and right-of-way, is estimated to be \$36,540,000.00.

Construction.....	\$ 9,580,000
Right-of-way.....	\$ 26,960,000
Total Cost .....	\$ 36,540,000

The primary traffic safety and operational problem associated with the existing four lane undivided section is that the inside lane normally associated with higher speed through traffic also serves as the left-turn lane. Given the high projected traffic volumes and number of existing driveways on this section of Merrimon Avenue, the conflicting lane usage results in increased congestion as well as an increased accident potential. In Alternate 1, the accident problem caused by left turn movements from the inside through lane is addressed by providing a two-way-left-turn-lane, but the overall capacity of Merrimon Avenue is neglected. *However, with the five-lane section, Alternate 2 provides a two-way-left-turn-lane and maintains the four through lanes for capacity.*

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

## II. Need for Project

The purpose of this project is to improve traffic safety and operations of the existing four lane undivided section on Merrimon Avenue (US 25) from I-240 to Beaverdam Road (SR 2230). The Asheville Urban Area MPO and the City of Asheville support this project.

Merrimon Avenue (US 25) is designated as a minor thoroughfare in the Asheville Urban Area Thoroughfare Plan and as a minor urban arterial in the North Carolina Statewide Functional Classification System.

For the most part, Merrimon Avenue is currently a four-lane, undivided curb and gutter section, 40-foot (12.2-m) wide face-to-face of curbs. Development along the project is mostly dense commercial development with a small amount of residential, public and institutional development mixed in. Given



the dense development along this corridor, the inside lane typically utilized by higher speed through traffic is also heavily utilized by left turning vehicles. This conflicting lane usage often results in an increased accident potential.

There are ten existing traffic signals along this section of Merrimon Avenue. These intersections are at the following locations: I-240 westbound off-ramp, Chestnut Street, Hillside Street, W. T. Weaver Boulevard, Murdock Avenue, Edgewood Road, Larchmont Road, Colonial Place / Gracelyn Road, Ottari Road, and Beaverdam Road.

The NCDOT Division of Bicycle and Pedestrian Transportation has requested that bicycle accommodations be provided under this project. Merrimon Avenue is listed as needing bicycle safety accommodations in the Incidental Bicycle Needs section of the 1998-2004 TIP.

The 1998 Average Daily Traffic (ADT) along Merrimon Avenue (US 25) varies from 20,000 to 30,500 vehicles per day (vpd). For the design year 2025, the estimated traffic volumes on Merrimon Avenue (US 25) will range between 27,800 to 43,100 vpd. Truck traffic is estimated to make up three percent of daily traffic.

Currently Merrimon Avenue (US 25) is operating at Level of Service (LOS) F. If no improvements are made, it is projected that the roadway will operate at LOS F in the design year 2025. If Merrimon Avenue (US 25) is converted to a three-lane curb and gutter section, the facility will operate at LOS F in the current year and at LOS F in the design year 2025. If Merrimon Avenue is widened to a five-lane curb and gutter section, the facility will operate at LOS D or better in the current year and at LOS F in the design year 2025. Before the proposed five lane section will accommodate the 2025 design year traffic volumes, additional improvements including but not limited to additional turn lanes on the side streets will be required. These improvements are considered outside the scope of this study and therefore not included in the cost estimates. Even though, the five-lane section in Alternate 2 will not accommodate the projected traffic volumes without additional improvements, it will provide a marked improvement over either the three-lane section proposed in Alternate 1 or the existing four-lane undivided section.

During the three-year period from March 1995 thru February 1998, there were 544 accidents reported on Merrimon Avenue within the project limits. There were 311 injuries reported as a result of these accidents, including 2 fatalities. The accident rate along Merrimon Avenue within the project limits is 1266 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1995-1997 statewide rate of 330 acc/100mvm for Urban United States Routes.



### III. Description of Alternates

This feasibility study describes improvements to Merrimon Avenue (US 25) from I-240 to Beaverdam Road (SR 2230), a distance of 1.8 miles (2.9 km). These improvements are modifications of the existing four-lane undivided section in an effort to improve traffic safety and operations along this section of Merrimon Avenue. The project location is shown on Figure 1. Two cross-section alternatives that were evaluated for this feasibility study.

#### Alternate 1

Alternate 1 proposes to convert the existing four-lane undivided section, 40-foot (12.2-m) wide face-to-face of curbs to a three lane curb and gutter section. This alternate includes the relocation of Murdock Avenue to the W. T. Weaver / Merrimon Avenue intersection. It is anticipated that 90 feet of right-of-way will be needed for this relocation. It is anticipated that no residences and one business will be relocated as a result of this alternate. The total cost of Alternate 1, including construction and right-of-way, is estimated to be \$2,530,000.00.

Construction.....	\$ 2,030,000
Right-of-way.....	\$ 500,000
Total Cost .....	\$ 2,530,000

A transportation benefit analysis was also completed for this alternate. However, the benefit analysis package developed by the Statewide Planning Branch of the North Carolina Department of Transportation resulted in negative benefits for Alternate 1.

#### Alternate 2

Alternate 2 is the asymmetrical widening of Merrimon Avenue to a five-lane curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on 90 feet (27.4 m) of right-of-way. All the right-of-way and widening is anticipated to be on the west side of Merrimon Avenue. In addition, some additional right-of-way will be needed just north of both the Chestnut Street and W. T. Weaver Boulevard intersections for an additional southbound right turn lane on Merrimon Avenue. This alternate also includes the relocation of Murdock Avenue to the W. T. Weaver Boulevard/Merrimon Avenue intersection. The anticipated right-of-way width for the relocation is 90 feet (27.4 m). In addition, this alternate also includes the lowering of the grade of the hill on Merrimon Avenue just north of Chestnut Street. It is anticipated that there will be 19 residences and 55 businesses relocated due to this alternate. The total cost of Alternate 2, including construction and right-of-way, is estimated to be \$36,540,000.00.



Construction.....	\$ 9,580,000
Right-of-way.....	\$ 26,960,000
Total Cost .....	\$ 36,540,000

A transportation benefit analysis was also completed for this alternate. For the period between the current year and the 2025 design year, it is estimated that the total transportation benefits for the project are \$81,274,000, which is an average of \$3,010,000.00 per year. The total benefits include accident cost savings, time cost savings, and operating cost savings.

## V. Other Alternates Considered

Another alternate considered was the widening of Merrimon Avenue to a five-lane, curb and gutter section, part asymmetrical and part symmetrical. The typical section is a five-lane, curb and gutter section, 68 feet (20.7 m) wide from face-to-face of curbs, with 10-foot (3.0-m) berms, on 90 feet (27.4 m) of right-of-way. This alternate is the same as Alternate 2 except that the right-of-way and widening of Merrimon Avenue between Edgewood Knoll Road and Gracelyn Road / Colonial Place is symmetrical around the center lane. It is anticipated that there will be 17 residences and 49 businesses relocated due to this alternate. The total cost of this alternate, including construction and right-of-way, is estimated to be \$38,480,000.00.

Construction.....	\$ 11,180,000
Right-of-way.....	\$ 27,300,000
Total Cost .....	\$ 38,480,000

## VI. Additional Comments

An environmental screening was not conducted for this study. However, no impacts to wetlands are anticipated.

There are properties within the project limits listed on the National Register of Historic Places. The Chestnut Historic District (NR# 866) is located on the east side of Merrimon Avenue from Orange Street to Woodrow Avenue. The Claxton School (NR# 1674) is located at in the northeast quadrant of the Merrimon Avenue / Hillside Street intersection. The Kimberly Amendment to Grove Park Historic District (NR# 1583) is located on the east side of Merrimon Avenue in the area of Farwood Avenue. In addition, Weaver Park is located on the east side of Merrimon Avenue at the just south of W. T. Weaver Boulevard. In order to avoid adverse impacts to these properties, it is recommended that any widening be to the west side of Merrimon Avenue.

Reed Creek crosses Merrimon Avenue near the W. T. Weaver Boulevard intersection. This section of Reed Creek is a Class C waterway and is classified as a critical area. This waterway is part of the French Broad River Basin.

The NCDOT Division of Bicycle and Pedestrian Transportation has requested that bicycle accommodations be provided under this project. Merrimon Avenue is listed as needing bicycle safety accommodations in the Incidental Bicycle Needs section of the 1998-2004 TIP.



